

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**In re Application of:**

Sandhu et al.

**Serial No.:** Not yet assigned

**Filed:** August 8, 2003

**For:** LOW RESISTANCE CONTACT TO  
SILICON HAVING A TITANIUM SILICIDE  
INTERFACE AND AN AMORPHOUS  
TITANIUM CARBONITRIDE BARRIER  
LAYER

**Examiner:** Unknown

**Group Art Unit:** Unknown

**Attorney Docket No.:** 2269-3264.7US  
(92-0280.10/US)

**NOTICE OF EXPRESS MAILING**

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Person making Deposit: Matthew Wooton

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The present application is a divisional of application Serial No. 09/921,615, filed August 3, 2001, pending, which is a continuation of application Serial No. 09/495,534, filed January 31, 2000, now U.S. patent 6,291,340, issued September 18, 2001, which is a continuation of application Serial No. 09/012,685, filed January 23, 1998, now U.S. Patent 6,081,034, issued June 27, 2000, which is a continuation of application Serial No. 08/509,708, filed July 31, 1995, now U.S. Patent 5,723,382, issued March 3, 1998; which is a continuation-in-part of U.S. application 08/228,795, filed April 15, 1994, now abandoned, which is a continuation of now abandoned U.S. application 07/898,059, filed June 12, 1992.

Pursuant to M.P.E.P. 2001.06(b), the Examiner is respectfully requested to consider the information of record in the prior applications, and to confirm in the first Office Action on the merits that such art has in fact been reviewed. A PTO-1449 or PTO/SB/08 form listing all of the information of record in the prior applications is enclosed herewith.

This Information Disclosure Statement is filed within three (3) months of the filing date of the above-identified application, and no certification pursuant to 37 C.F.R. § 1.97(c) or a fee pursuant to 37 C.F.R. 1.17(p) is required.

Respectfully submitted,



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Date: August 8, 2003  
JRD/sls:djp

Enclosures: Form PTO-1449 or PTO/SB/08  
Document in ProLaw

Form PTO-1449  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  <i>(Use several sheets if necessary)</i>			Docket Number (Optional) <b>3264.7US (92-0280.10/US)</b>		Application Number <b>Not yet assigned</b>	
			Applicant <b>Sandhu et al.</b>			
			Filing Date <b>August 8, 2003</b>		Group Art Unit <b>Unknown</b>	

  

U.S. PATENT DOCUMENTS						
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	3,637,320	01/1972	Wakefield et al.			
	3,807,008	04/1974	Reedy			
	4,035,541	07/1977	Smith et al.			
	4,497,874	02/1985	Hale			
	4,830,886	05/1989	Co et al.			
	4,960,732	10/1990	Dixit et al.			
	4,990,997	02/1991	Nishida			
	5,001,531	01/1001	Yamaguchi			
	5,049,975	09/1991	Ajika et al.			
	5,087,593	02/1992	Narula			
	5,132,756	01/1992	Matsuda			

  

FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
	4-87328	06/1992	Japan				
	4-38875	02/1992	Japan				

  

OTHER DOCUMENTS		(Including Author, Title, Date, Pertinent Pages, Etc.)
		Wakefield et al., "Preparation of Titanium Carbonitride From Mono-, Di-, and Tri-Methyl Amines"; 4 <sup>th</sup> International Conference on CVD, Electrochemical Society, 1973, pps. 173-150.
		Politis et al., "Preparation, Characterization and Superconducting Properties of TiN and TiCxNy Single Crystals Prepared By CVD"; 7 <sup>th</sup> International Conference on CVD, Electrochemical Society, 1979, pps. 289-299.
		Raaijmakers et al., "Contact Hole Fill with Low Temperature LPCVD TiN", VMIC Conference 6/12-6/13/90, pps. 219-225.

  

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance. Include copy of this form with next communication to the applicant.

Form PTO-1449  <b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b>  <i>(Use several sheets if necessary)</i>				Docket Number (Optional) <b>3264.7US (92-0280.10/US)</b>		Application Number <b>N t yet assigned</b>	
				Applicant <b>Sandhu t al.</b>			
				Filing Date <b>August 8, 2003</b>		Group Art Unit <b>Unkn wn</b>	

  

U.S. PATENT DOCUMENTS						
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,139,825	08/1992	Gordon et al.			
	5,178,911	01/1993	Gordon et al.			
	5,192,589	03/1993	Sandhu			
	5,246,881	09/1993	Sandhu et al.			
	5,384,289	01/1995	Westmoreland			
	5,496,762	03/1996	Sandhu et al.			
	5,536,947	07/1996	Klersy et al.			
	5,571,572	11/1996	Sandhu			
	5,723,382	03/1998	Sandhu et al.			
	5,893,758	04/1999	Sandhu et al.			
	6,081,034	06/2000	Sandhu et al.			
	6,291,340	09/2001	Sandhu et al.			

  

FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

  

OTHER DOCUMENTS		(Including Author, Title, Date, Pertinent Pages, Etc.)

  

EXAMINER	DATE CONSIDERED
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